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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,756	02/21/2006	Yoshiyuki Sankai	Q93366	6664
23373 7590 11/05/2009 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037				
EXAMINER DEMILLE, DANTON D				
ART UNIT		PAPER NUMBER		
3771				
NOTIFICATION DATE		DELIVERY MODE		
11/05/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@SUGHRUE.COM
PPROCESSING@SUGHRUE.COM

Office Action Summary

Application No.

10/568,756

Applicant(s)

SANKAI, YOSHIYUKI

Examiner

Danton DeMille

Art Unit

3771

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 8-13, 19-23 and 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 14-18 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-85/08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date See Continuation Sheet

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :8-6-2009, 4-22-2008, 7-5-2007, 2-21-2006.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claims 1-7, 14-18 and 24 in the reply filed on 11 August 2009 is acknowledged. Claims 8-13, 19-23 and 25 have been withdrawn.

Claim Rejections - 35 USC § 112

Claims 1-7, 14-18 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims refer to the control unit as an "optional" control unit. It is not clear if this optional element is being claimed or not. It fails to particularly point out and distinctly claim the invention.

Regarding claim 6, it is not clear what is meant by "minimum action units (phases)" and "power application rate (power assist rate)". Are these additional forms or alternative forms?

Regarding claims 14-18, it is not clear what is the scope of these claims. A method of controlling a wearable action-assist device is claimed however, the action-assist device is controlled by a machine. It is not clear how someone is intended to control the action-assist device when the machine does it. The method of controlling a wearable action-assist device is to turn it on. The machine does the rest.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 24 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 24 merely recites “[a] program for causing a computer to execute the method according to claim 14”. A program for causing a computer to execute a method is considered descriptive material. Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure’s functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized, and is thus statutory.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 14, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horst (US 7537573) in view of Kuiken et al.

Horst teaches a wearable action-assist device comprising an actuator 12, a biosignal sensor, column 9, lines 13-16, detecting a wearer’s biosignal, a biosignal processing unit within a control unit 402. The biosignal sensor acquires myoelectric signals. The control unit generating command signals for causing the actuator to generate power according to a wearer’s intention.

While it is not clear if the myoelectric sensor also includes nerve transfer signals Kuiken teaches such an option.

Kuiken teaches “[i]t may be possible to graft remaining peripheral nerves in an amputated limb to spare muscles in or near the residual limb and use these nerve-muscle grafts as additional myoelectric control signals”, abstract. The peripheral nerves that are transferred to adjacent muscles generate nerve transfer signals. Kuiken teaches that these nerve transfer signals and additional myoelectric signals can be used for controlling wearable action-assist devices. Kuiken teaches the electromyography signals from the nerve-muscle grafts would need to be independent of each other. Kuiken teaches the advantages of using these nerve transfer signals in addition to myoelectric signals to allow simultaneous control of multiple degrees of freedom and could greatly improve the control of artificial limbs. Artificial limbs are wearable action-assist devices. It would have been obvious to one of ordinary skill in the art to modify Horst to include nerve transfer signals as additional myoelectric control signals as taught by Kuiken to simultaneously control multiple degrees of freedom to greatly improve the control of wearable action-assist devices.

Regarding claim 24, to any extent this claim recites a computer readable media, the program taught by Horst in view of Kuiken would comprehend the claim.

Claims 6, 7, 17, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 1 above, and further in view of Simmons.

Simmons teaches a wearable action-assist device that includes a microprocessor including a database including a standard parameters of a series of minimum action units which constitute a wearer's action pattern classified as a task and a power assist rate of the actuator. The system compares the physical quantity with the standard parameters stored in the database and determines a power assist rate to perform the desired task, paragraph 668. The desired task

is a golf swing. The processor switches from user-directed motion to forcible replay motion by noticeably bumping the user back into the proper groove.

Regarding claim 7, Simmons also teaches “the software can recognize spasms, falls, fainting etc. and enlist the assistive clothing to rapidly engage and protect the user by switching to a stable position script” in an opposite direction of operation concerned in order to maintain the user in an upright posture.

Allowable Subject Matter

Claims 3-5 and 15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danton DeMille whose telephone number is (571) 272-4974. The examiner can normally be reached on M-F from 8:30 to 6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine Yu, can be reached on (571) 272-4835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

3 November 2009

/Danton DeMille/
Danton DeMille
Primary Examiner
Art Unit 3771